This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

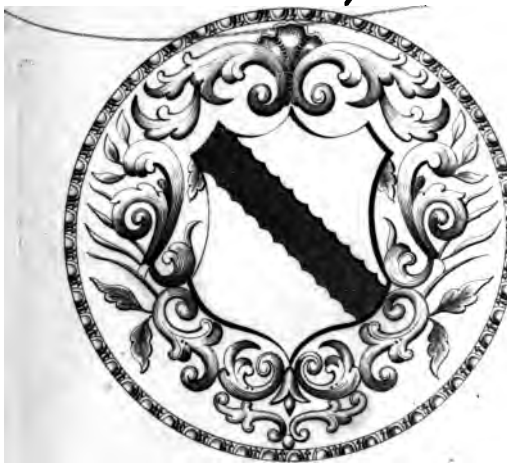
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

E. 77. L. 7.



E. BIBL. RADCL.

C

1918 K. 63

CR

PRACTICAL INSTRUCTIONS

FOR THE

FORMATION AND CULTURE

OF THE

TREE ROSE.

PARVA LEVES CAPIUNT ANIMOS.

LONDON:
J. HATCHARD AND SON, PICCADILLY.
1828.

LONDON:
IBOTSON AND PALMER, PRINTERS, SAVOY STREET, STRAND.

PREFACE.

WHEN a traveller gives an account of the country he has been wandering over, he frequently delays writing his description until he has been somewhat accustomed to the place, its manners, customs, and inhabitants, and thus instead of mentioning what struck him at first sight, and is in reality the most amusing and instructive, he publishes his work as a hard outline, deficient in those light shades and fine touches, without which his picture is unequal and incomplete.

Thus it is with writers upon experimental subjects, they frequently suppose that a certain quantity of technical knowledge is previously in possession of the reader, and omitting some necessary part of their descriptions upon this assumption, the theory to the reader is incomplete, and baffles his endeavours to act upon it.

With a desire to avoid these errors, the memorandums in the following pages have been noted down from time to time; they are the result of an examination of all the works upon the subject accessible to the author, during a practice which commenced in perfect ignorance and ended by almost certain success.

The great inducement to collect together the following remarks, arose from the observation of the frequent failure of common gardeners, who usually act from practice

alone, and therefore do not always vary their operations as often as the changeableness of the year and the nature of the place in reality require.

A fact aptly illustrated by a failure in eleven cases out of twelve in the first experiment on this subject witnessed by the author, though the operator was called an experienced hand.

Be it observed, that while the author acknowledges himself indebted for much matter, and almost entirely for arrangement, to works published upon the subject, especially to a small pamphlet lately published in France, yet it is upon his own practice and observations that he depends for his assertions, and from his own failures (partial or entire) that he endeavours to point out the deficiencies likely to prevent success, and the

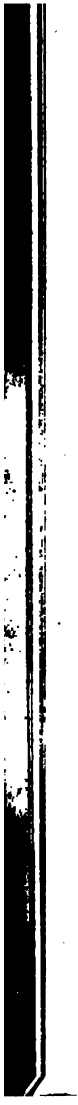
means and observations requisite to improve upon it.

Amongst the amusements of the most refined and elegant minds, those which have some reference to the productions of nature, are, perhaps, the more satisfactory, both in practice and result.

Ornamental scenery, the culture of exotics, the laying out of pleasure grounds, &c. are matters which involve a considerable expence both in commencement and continuance, though perhaps only indulged in to a small extent; but the *gradual* improvement of a place, by adding to the number of ornamental shrubs, filling up vacancies, &c. is an amusement, indulged at a less expence, requiring only occasional assistance, a little method, and a few implements for the purpose of propagating the species desired,

many of which will bear to be transplanted repeatedly, and costing little at first, are fit subjects of practical amusement to those who like to have such matters under their own especial eye, and are interested in them in proportion as they themselves can increase and attend to them.

Should the following little work be found to further this object, the intentions of the writer will be fulfilled.



INTRODUCTION.

AMONGST the ornamental shrubs in cultivation, the rose has long borne the belle from its shape, permanence, the variety of its species, and the brilliancy of its colour; one thing, however, seemed desirable, viz. that the unneatness, as it were, of the plant should be corrected by its springing like most other ornamental shrubs (which are not feathered to the base) from a single stem. As well as that its height should place it above the other shrubs which (particularly evergreens) would otherwise hide, choke up, and injure the plant.

The mode adopted to gain this point, which has also added to the beauty and regularity of the plant, as well as to the profusion of its flowers, (though it is said to have injured its durability,) will be treated upon in the following remarks, together with the means of preserving the health, and improving the appearance of the tree.

There appear to be but three reasons for entering into competition with mechanics in any branch of their work; the first, to effect our own purpose, with our own hands, and thus furnish ourselves with occupation and amusement; the second, to avoid the expence attending the labour of others; and the third, and more difficult, to improve upon the manufacture, by dexterity of operation, care in completion, and choice of material.

I shall endeavour to show that these points may be perfectly obtained: the first, by the ensurance of success to the operator from a clear and comprehensive view of the subject;

the second, by a diminution of expence; and the third, by an evasion of those deficiencies which are the result of scanty labour and general inattention.

The usual price of a tree rose, is from five shillings to ten and sixpence, the materials required to make any quantity are few, of little or no value, and the stocks* themselves are procurable in any number at any price in the country.

Rose trees properly treated rarely perish in a good soil, and when they do, it is in general during the first season, and before

* The first of these articles is the only one absolutely necessary; the remainder are the operator's luxuries.

Budding-knife . .	0	5	0
Letters and figures to label .	1	5	0
Punch . . .	0	2	6
Steel plyers and nippers .	0	2	6
Bundle of copper wire .	0	1	0
Piece of lead . . .	0	1	0
	1	17	0

any trouble has been bestowed upon the stocks. As the stocks will be picked, they will more than equal those in common use, and being subsequently budded upon, according to their size, health, and fitness for the species they are intended to carry, the success will be more complete than when no selection is made in the material, and the cultivation is confined to a demand for particular species, and the labour and time bestowed upon them, limited by a due regard to the per centage they are intended to return.

The injury from wounds, also, being commensurate with the first planting the stock in the salesman's nursery, the damage done to it by the time it has become ornamental, is frequently irretrievable, and the tree vegetates weakly for a season or two, (especially if small,) and then dies, or is broken off by the wind. This, a careful attention to the following rules, will effectually obviate.

CONTENTS.

	Page
Buds, securing a supply of . . .	1
Stocks, the means of procuring, colour, age height . . .	3
Sorts for different species of rose, taking up, trimming roots, sending a distance, shortening heads, &c. saw proper for the purpose . . .	8
Mixture for covering wounds . .	15
Stocks, planting out for budding upon .	16
Shoots for budding upon, and their arrangement	17
Caterpillars, slugs, and snails, to destroy .	18
Shoots, attention to keep even, removing thorns	19
Budding, time of year, day, time of day, state of the plant, care of buds . .	20
Œil dormant and œil poussant . .	21
Roses, short list of some desirable sorts to bud with a l'œil poussant . .	23

	Page
Roses, different sorts on the same stock	23
Shoots and buds, choice of each	24
Bud, preparation of, for use	26
Bud, insertion of, into stock	31
Binding up	33
Protection from the sun	34
Causes of success	34
Labels on budded trees	35
Budding upon body	37
Buds failing, and quantity of buds on the tree considered	40
Loosing ligatures	41
Shortening wild shoots	43
March pruning	44
Sap bud, treatment of	45
Œil poussant, Spring treatment of dwarf shoot from	50
Guards for springing buds against wind	51
Pruning for transplantation	53
Knots and cuts to remove	54
Dormant buds, replanting stocks in this state, theory explained	55
Annual pruning time, principle of execution, &c.	61
Shape of trees	65
Planting in avenue, &c.	69

GRAFTING.

	Page
Preliminary observations	74
Scions, choice and arrangement of	75
Stock, preparation of	77
Scion, preparation and insertion of	77
Graft, binding up and finishing	79
Grafting, disadvantage of	81
——— advantage of	82
Operations of different months	83
Roses, catalogue, and brief description of a few sorts	86
Free-growers, remarks upon	89
Aphides to keep down	90

SINCE the preceding pages have been to press, it has been suggested that the words *autumnal* and *spring*, page 24, may be considered as referring to the periods when the shoots first began to push, and not, as intended, *to their actual state at the season of budding*. The sense in which the former of these words is to be here understood, is, "*continuing in a growing state during the autumn*," in opposition to those shoots termed above *spring shoots*, which having borne flowers at their summits, or from any other cause, are *comparatively dormant at the time when the buds are required for use*.

The terms *flower shoots* and *wood shoots* may be substituted for *spring* and *autumnal*, provided we bear in mind that Chinese roses and Hybrids form a half exception to the rule laid down, as their buds may occasionally,

and, indeed, sometimes must be procured from flower shoots.

When, therefore, the species to be propagated is a free flowerer, and like the damask and du Roi, produces upon every shoot, grafting (with the exception of China roses) is the most eligible mode of propagation, both for the purpose of avoiding waste and ensuring success. When this is objected to, those shoots should be chosen, the flowers upon which are forming, in contra distinction to such as have full blown flowers, or their remains at their summits.

PRACTICAL INSTRUCTIONS,

&c.

SECURING A SUPPLY OF BUDS,

It is necessary at the commencement of the following observations, to remind the reader, that *ex quovis ligno non fit Mercurius, anglice,* good work will not spring from bad materials. Previous then, to making any other preparations, it is desirable to secure a supply of buds against the time when they will be used, either by having the plants from which they are to be taken in your own garden, by promise from that of a friend, or by purchase from a nurseryman on whom you can rely. (It may be as well to remark here, that if either of the latter be

the case, it will be well, at the time of use, for you to see that the shoots on which the buds are, be quite fresh, or, if possible, to cut them yourself.) If, however, you cannot obtain any by these means, nothing remains but to buy a few plants for the purpose. If you are driven to this, secure fine ones, for small weak growers will produce few shoots fit for your purpose. If the plants to give the buds be on their own natural roots, see that they are planted as soon as they have lost their leaves in autumn, in order that they may get well settled before the spring; but if you wish to secure a good supply of buds, purchase, at a nursery, a strong stemmed standard rose or two: see that they have plenty of wood and are in health. By choosing without reference to shape, and merely on account of the buds you expect them to yield in the autumn, you will be able to obtain those which have been rejected for a season or two by other buyers, and are vigorous and well rooted; plant them with

good mould round the roots in November, taking care to remove any leaves there may be on the trees previous to planting; stake them well, and by trimming, as subsequently directed, a more regular and certain supply of buds will be procured than in any other way; and provided the trees be a little favoured, they may get over the injuries inflicted by removing their best shoots, especially if two or three buds be left at the base of each shoot thus removed. *v.* Cleft grafting.

CHOICE OF STOCKS.

THE proper time to procure stocks is during the month of November, (the period, however, may be delayed until the first of February, but it is not desirable to do so, for the under-mentioned reasons,* though

* Plants procured and planted in November, will be found to produce much finer shoots than those planted

stocks procured even so late as the fifth or sixth of April will occasionally succeed,) and nothing more is necessary than to send to

later; the shoots upon them are also better placed, two rarely starting from the same eye, but springing from following knots, and are opposed to each other on the stock; and if three shoots push, they are in general from the three upper rings on the stock, and evenly triangular. November plants seem to accumulate their strength, and, as above mentioned, forming their buds at the nearest possible points to the extremity of the stock, start and continue their growth with unabating vigour, and at the end of May an unexperienced eye would at once discern the difference between a body of stocks entered in November, and the same quantity placed in the ground in January or February, although an unequal strength in single plants might render the difference not so perceptible.

Four objects are gained by early planting, viz. large shoots—well placed shoots, with reference to each other, both in proximity and position—the formation of a head as near the extremity of the stock as possible—and, on the whole, a more vigorous plant. Late plants, on the contrary, are uncertain as to the places where they will push: a part of the stock is frequently

the nearest wood-cutter, or the headsman of a farm, and desire them to make a collection for you, either from the woods, or to save you a supply when they grub up a hedge; in the former, you will procure more single ones, in the latter, most of those which spring from a clump root: this latter is a matter of small importance, as the wild stock will flourish with hardly any root, indeed often without a single fibre.

In all probability, following the directions received, all sorts of stocks would be brought as well as heights: although they differ both in size and sorts in different places, the red have the hardest and firmest wood, and have least pith; the smooth green are the

lost from this circumstance, a greater degree of trouble is incurred in removing useless shoots straggling about the stock, and the shoots which are eventually retained are faulty in one or more of these particulars, viz. of a more uneven growth, much smaller than is desirable in circumference, fewer in number, and backward in their growth.

easiest to bud on the stem, and the green and brown striped are between the two. Some sorts, as the red, take not so freely, but as budding should be done at a time when success is almost certain, this is a matter of less consequence than the appearance of the future tree; choose, therefore, the clean, healthy, sizable stock, and care not about the colour; if, however, you have large choice, the green, and green and brown striped are questionless the best.

It is true, that the size of the stem will continue to increase after grafting, but not in the same ratio as it would have done with a wild head, the free growers will of course increase it much more rapidly than delicate sorts, and if the roots are freed from rotten wood in planting and transplanting, and the shoots above well pruned, there is no fixing the size the stock will attain to.

The largest stocks are those which have an oval fruit, (they are called, indiscriminately, dog roses, buckbriars, hangbriars, &c.

by the countrymen, though the varieties are endless,) with these, if the height be proportioned to the size, no support is necessary even when the tree is complete, unless the head be very large; but as different roses require different stocks, this advantage with some species of rose cannot be obtained.

The small green round-berried stocks are least able to resist the frost, they are in consequence planted double the height required, left to grow as they please, and budded a foot from the ground in the stem instead of the shoot, a matter the thinness and flexibility of the bark renders extremely easy, being thus suited for pots, &c.

Age is not a matter of great importance, one, two, or three years; but one thing must be attended to, viz. that the stocks be free from knots, otherwise you have a mangled stem to begin upon, spoiling the appearance of your work, but if needs must, take care to remove the branch desired, by a clear cut, *quite to its base*, and cover up the wound

directly by rubbing it over as subsequently pointed out.

SORTS FOR DIFFERENT ROSES.

DIFFERENT roses require different stocks. A tree that of itself would make a yard of wood in a season, is confined and injured in its operations, by having, perhaps, a single bud upon it of some rare and delicate sort of rose, which makes but feeble and delicate shoots. If left to itself under such circumstances, the extra sap would find a speedy mode of escape, by sending forth innumerable shoots from below the bud, and the bud would soon have but a bare subsistence.

Again, if a free growing bud, such as the Noisette, Greville, &c. were put upon a small stock, the bud would entirely drink up the sap of the stock, and instead of making a fine bushy head, would either grow in one long shoot, or, at all events, make a small

and mean head, in comparison to what it would have done upon a larger stem. Choose, therefore, your stocks with reference to the purposes you wish to put them to, taking care to desire the bringer to cut them above the first fork, (both in order that you may have the whole stem, and that you may be the better able to see what strength of shoot they are likely individually to produce the succeeding summer, from the quantity of head you cut off, and its clear and healthy appearance,) remembering that stocks being so very easy to procure, none but the very straightest and best should be chosen, and the rejected ones may be planted in some out of the way place, in case you should run short, a matter that otherwise would take a year to rectify. Choose, therefore, about a third more stocks than you absolutely want, and let the others be laid in the ground, as a *corps de reserve;* you will be certain to work them in the season, and without taking any trouble about them

whatever, except as to budding them, according to their health and strength, you will have all the advantage of a supply of different heights, sizes, and sorts.

When the stocks are taken up, they should be kept *as short a time as possible* out of the ground, as the air injures the root. This is of the greatest importance, as the strength of the expected shoots will mainly depend upon it; but if they have been weakened by lying out of the ground, they will regain a portion of their strength by being much shortened in the stem—for the roots of all trees being proportioned to the trunk they have to maintain, it is evident that an injury to the one should be followed by a reduction of the other; and thus, to a certain extent, the more head you remove in the autumn, the freer supply of new wood you will have in the spring.

If you are desirous to keep your stocks some time before planting, they must, like all other trees, have their roots covered with

mould, technically called, *laying by the heels.* When stocks are sent any distance, a puddle of clay and water should be made, and the stocks dipped in it, so as to form a coating to defend them from the wind; and then, being packed up in an old bass-mat, they will carry without injury.

The trimming of the stocks is next to be considered—first, as to the requisite height secondly, as to the mode.

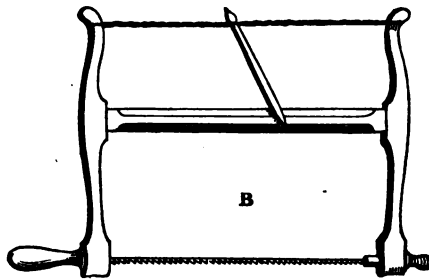
The heights most desirable are, four feet, three feet, two feet six inches, two feet, one foot six inches, one foot. See *Planting out.*

The manner is, by a clean slanting cut, at about an angle of fifty degrees, the upper part of the remaining stock being a quarter of an inch above a bud. If the bud be not enough marked to show its position, let the lower part of the slant be that distance above the ring denoting whence the bud is to spring from, and the extra

part can be afterwards removed. The object of cutting so near to a bud is, that when the the first shoot starts, the bark may begin to form over the wound; but if there is any distance between the wound and the base of the new shoot, this will not be the case, and the dead wood will gradually eat into the stock. If, therefore, the cut is not made in such way that the stock may begin to be covered the first year, it will be better to leave a few inches (viz. as much as is between the bud cut off, and that desired to produce the new shoot) to tie the tender shoots to, from the buds you insert; and delay cutting it off till your graft has become strong enough to heal the wound without danger to itself. This will, in general, be about eighteen months after budding, when care must be taken to cut close enough to the base of the shoot, which enables the rising sap to cover the wound more easily. In all cases, *the wound should be covered* with either the following mixture *immediately*, a small piece of grafting clay, or, at least, a little mould rubbed upon it.

Trimming the root is a matter, if possible, of even more consequence, as you will have but one more opportunity of reviewing your work in this respect, and perhaps none of retrieving your mistakes. The longevity of your plant depending mainly upon the root, it is necessary to shorten all those which are long and thick, and to remove heavy lumps and clumps of unserviceable root, leaving, as nearly as you can, only such parts as are furnished with small fibres and roots. This will enable you to plant your stocks with greater care; and forcing the plants to make fresh shoots, (which, in the good ground in which you place them, they will be sure to do,) the trees will continue to improve. The roots, however, requiring the *same attention* as the branches, for a closer investigation of the subject, see *Transplanting*. It is therefore only necessary to add here, that attention must be had to these points; and for the greater convenience of cutting the roots, which being sometimes twisted, and in

cramped positions, it will be desirable to borrow a small carpenter's saw, of this shape,



as well as a hand-saw, and thus every facility being afforded in cutting the root exactly as they may require, your work will be much expedited, as well as improved; but it must be remembered, that wherever a saw is used, either to root or branch, the surface left must be smoothed over with a knife, and the wound rubbed with clay, earth, or mixture.

Having finished these operations, and ascertained the height you desire your stocks to be, this is the proper time for shortening

them, previous to planting in rows for budding on.

MIXTURE TO HEAL WOUNDS, AND MODE OF APPLICATION.

Five-eighths of black pitch, one-eighth of resin, one-eighth of tallow, one-eighth bees'-wax :—

Or—Half bees'-wax, half pitch :—

Or—One pound of white Burgundy pitch, a quarter of a pound of black pitch, a quarter of a pound of resin, a quarter of a pound of bees'-wax, two ounces of tallow, one ounce of pounded mastic, half an ounce of saltpetre.

Warm either of these mixtures in a small pipkin, upon a moderate fire, and leave it to melt for three quarters of an hour. When it is well melted, *and not too hot,* dip the ex-

treme point of each stock in it, so as to leav the thickness of two or three sheets of pape of mixture at the end; or if your stocks b planted, lay it on with a small brush.

PLANTING OUT.

COLLECT the stocks, lay them even ac cording to their several heights on th ground, dig a trench, place your talles stems in it, and in front of that another o the next size, until all are planted out— taking care to leave sufficient room betwee each line for you to pass in and out withou much difficulty, tread round the earth to fi them tight, and then, with a long osier o hazel, attach them to each other in the same line, as the top bar of an iron railing connects the uprights, and they will then be preserved from injury by the wind.

The earth in which the stems are placed

should have been previously well manured, and time given to permit it to be completely absorbed and amalgamated with the soil.

SHOOTS.

STOCKS planted in November, begin to push in the March following: those much later entered, viz. after February, are delayed three weeks or a month. At the time the buds begin to appear, it is necessary to look over your stems, from time to time, leaving only those buds you wish to make use of, as too many would spoil the appearance of the plant, from starting too low down the stem.

The desirable number is one or two, to a weak plant—three, four, or even five, to a strong one. If two, they should be opposed to each other; if three, should form a triangle; if four or five, they should be as nearly as possible equidistant from each other, like the points of a spur-rowel, and all

the shoots should be full, free, vigorous, and as near the top of the stem as possible—the lowest being not more than three inches under the upper one: thus you will form a proper shaped head at once. The remainder of the buds should be rubbed off as they appear, and before they have started above half an inch; and all suckers should be eradicated the moment they are seen.

INSECTS.

In order to secure your shoots from the attacks of the caterpillar, it is necessary to look over them frequently, destroying slugs and snails also, as all of these do much injury—the first by eating the point of the shoot on which it remains whilst there is food, twisting the end leaves together, and living on them—the others by eating through the shoot, frequently at its base, if not large and ripening.

KEEPING SHOOTS EVEN, AND REMOVING THORNS.

As soon as the spring-shoot is over, it will be well to overlook your shoots, and if you find upon any of your stocks a single shoot which is running away from the others upon the same stem, stop it by pinching off the extreme point, in order to bring the others up to it, that all the shoots may assimilate in size by the time they are to receive the bud.

On the first of July, it will be well to move off the thorns from the places you wish to bud upon. If this be delayed, the plant will have had no time to recover from any slight injury, and you will be at a loss to place your bud. A sufficiency of the shoot should be thus cleared, to allow of the ligature being placed without any thorn interfering with the operation.

TIME OF BUDDING.

FROM the beginning to the end of August is, perhaps, the most certain time to bud, *a l'œil dormant*, as the *sève* is then in full force, especially if the season be moist, after a drought. The passage of the sap, however, varies in different years, and the time to bud of course varies with it. The desideratum is, that the tree should be in full vigour, and the bark part with the utmost facility from the wood, showing a rich supply of sap below it. This is, in general, the case at the season before mentioned A fall of rain should be taken advantage of, if possible; for, be it observed, that budding during a long drought would be labour entirely thrown away. If the season, therefore, advances without rain, and the *sève* in consequence be checked, adopt the substitute (which, by the bye, is a poor one) of watering the roots of your stocks well for some days, before

hand; but in the event of rain, take to your work the next day.

Early in the morning, and late in the evening, are the best times to bud; and if you can procure a cloudy day, so much the better. Above all, reject a day having a drying northerly or easterly wind, which, creating evaporation, dries up all the tender parts exposed to it, and your work is killed before it is finished.

ŒIL DORMANT ET ŒIL POUSSANT.

THE difference in England between *œil dormant* and *œil poussant*, is merely one of chance, and almost confined to free-growers. The time chosen to bud, is generally the end of July, or beginning of August, and if a bud springs, the branch is shortened, two or three buds only being left on the branch, (and these are pinched off, one by one, as

the shoot advances.) These, of course, beyond the inserted bud, which thus has a chance of shooting strong enough to ripen before winter; if this be done, one bud should always be left, (though nipped at the point to prevent its occupying the sap,) as a security during winter, which would otherwise be more likely to cut off the shoot which has, as yet, but little strength.

This lopping a branch, however, at a time, when the sap is at its fullest, cannot but injure the root of the plant, by the temporary stagnation it causes.

In France, budding a *l'œil poussant* takes place at the end of May, and is frequently used when a few buds only being procurable of a certain desired species, it is an object to increase them as soon as possible; in this case, three or four buds should be left beyond the starting bud, and these should be taken away, as before mentioned, with the intervention of a week between each.

ROSES FOR BUDDING A L'ŒIL POUSSANT.

THE sorts most likely to succeed in this way, are Chinese roses, and Hybrids, &c. Amongst which are the following:—

Du Roi	Greville
Blush ditto	Multiflora
White Noisette	Double Purple
Purple ditto	Banksia
Sanguinea	&c.

DIFFERENT SORTS OF ROSES ON THE SAME STOCK.

IT may be observed here, that buds from roses of different sorts, may be freely placed on the same stock; but not if their manner of growing be different, that is, one free, the other delicate and slow; as the free-grower famishes the other, and, at any rate, the tree grows and looks lop-sided.

CHOICE OF SHOOT AND BUD.

The shoot from which the bud is taken should be healthy and vigorous, of the autumnal growth, and should look as if it were in its full strength, and on the point of finishing its growth: the wood of it also must be sufficiently ripened.

If a spring shoot be taken, it is fifty to one but the bud is quite inactive, or else has imperceptibly opened, in which latter case, evaporation would take place before the junction became effected, and the bud would perish; if the former, the bud is not in the state required, being too torpid to effect an union.

The autumnals also part better from the wood, and are larger in girt from having the strength of the sap spent upon themselves instead of upon the flowers, (besides the circumstance of the tree being at that period in full action,) and they frequently start the

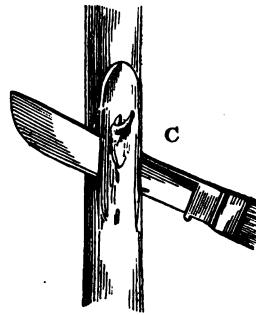
same year with success, whereas the buds of the spring, in a similar case, generally fail.

If the shoots come from your own garden, cut each as you use it; if from a friend's, place the ends in a watering-pot, to keep them moist, and take care to keep them from the sun, using them as soon as possible after they have been cut, which ought to be at sun-rise in the morning.

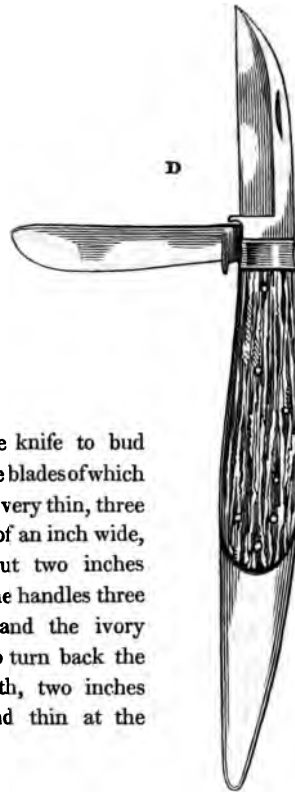
The bud is found in the axilla of the leaf, which ought to be cut off a third of an inch from the bud, on separating the shoot from the parent plant, in order to avoid the evaporation from it, which would weaken the bud. The look of the bud should be round, full, quite closed, and healthy; those from the centre of the shoot are preferable, as those at the base are more likely to lie dormant, and those at the top not so safe, sometimes a little open, and weaker.

The leaf under the bud should be healthy, and shoot, buds, and leaves, appear of even and luxuriant growth.

PREPARING THE BUD FOR USE.



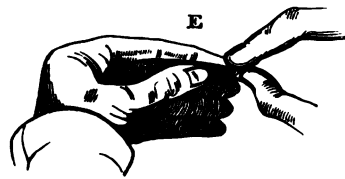
Take the shoot in the left hand, holding the thick end inwards; enter the knife three-fourths of an inch above the bud, and bring it out the same distance below, cutting half through the wood, so that the shield (or portion of bark containing the bud) comes off in the shape of the segment of a circle: this is when the buds are scarce, and you wish to get as many as you can from the same shoot; if not so nice about them, give a good inch to the top of the shield.



D the knife to bud with, the blades of which must be very thin, three eighths of an inch wide, and about two inches long; the handles three inches, and the ivory point, to turn back the bark with, two inches long, and thin at the end.

Take the bud between the finger and thumb of the left hand, holding the point of

the bud downwards, press the bud gently to keep it in its place, twist the upper end of the shield, which ought to be nearest you, gently backwards and forwards, and the wood will come loose from the shield. Take out

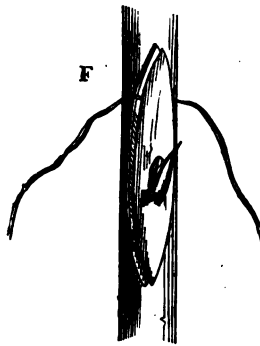


the wood with the right hand, and see that no vacuum be left in the inside of the bud; if there is, the root is gone, and it is impossible it should succeed; (although the bark uniting might appear to give you hopes of it;) if not, the shield is fit for use, provided the bud has not been nipped too hard, or displaced by the shield having been incautiously bent; in either of which cases, time must show the defect by the failure of the bud.

Or,—Mark out in the shoot by cutting round the shield, and peeling off the rest of the

outside bark, the piece you wish to take off; press the bud gently against the wood, with the finger and thumb of the left hand, and twist the wood from side to side, and the shoot being in full *sève*, the shield will detach freely.

Or,—Mark out in the same way, the bud you wish, place a hair or piece of silk behind the bud, between the bark and wood, and taking care that the silk as it were scrapes the wood that lies behind it, in its progress between the bud and shoot, and pulling the two ends of the silk, the bud will remain uninjured, and the shield fall off safe and sound.



If there be the least difficulty in detaching the shield, from its adherence to the wood,

the shoot is not in order, and the buds upon it must be rejected, though some might, by a possibility, succeed.

In the first of these cases, the separation of the little segment of wood which comes off with the shield, should commence at the end of the shield nearest its summit, which mode,

from the slanting position of the bud, hooked as it were into its case, will be found a less likely way of pulling out the root, than beginning at the other end; the edges of the bark of the shield should be smooth and clean, particularly where, as subsequently directed, it is cut off to meet the bark of the stock into which it is inserted.

N. B.—If the shoots are brought from a distance, be particular as to the leaves being cut off as above, on removing from the parent tree.

INSERTION OF BUD.

On the upper part of the shoot of this year, as close as possible to the stock, say to

H

touch it within the eighth of an inch at its base, cut a line an inch and a half long, in the direction of the length of the shoot, quite (but no more) through to the wood, above that at right angles make a cross cut about two-fifths the diameter of the shoot, or rather say, wide enough to admit the shield freely.

I

Proceed, then, to prepare the shield as before directed; which done, place the upper end of the shield, but only the tip of it, between your lips, then loosen the sides of the bark, within the dotted lines, turning down, as it were, the corners of the bark at

the top, with the ivory end of the budding-knife; this must be done without injury to the bark, and clean to the wood, and no difficulty whatever must occur in separating the bark from the wood, if there be, the sap is not active, and the bud inserted would perish.

Slip in your shield to the bottom of the

incision, and then cut off the piece of bark which was between the lips, even with the cross cut, so as to leave the upper part of the shield in the place where the overlaying lips were before.

The bud is now in the centre of the incision, and in that position is less likely to be injured by wind, when it pushes, as well as more convenient to bind over, than if it were at the extreme point.

The first junction takes place at the cross cut, by the sap in its descent: care must

therefore be taken that the shield fits exactly at that place.

The shortest possible time should elapse pending these operations, lest the lips of the covering bark or the bud should get dried; and for this reason, as before mentioned, a dull growing day is far preferable to a windy one, as evaporation is the death of the bud, which, like all cuttings from the mother plant, succeeds best the less the air that reaches it.

BINDING UP.

Have a handful of fine bass soaking in water, ready at hand, and the moment your insertion is complete in the individual plant before you, place the middle of your bass behind the shoot at the bottom of the long cut, and bring the

ends across and across each other, back and fore, covering the shoot, all but the bud, which must be left peeping out, unconfined; continue the crossing till you have got a little above the bud, and then tie the top in a knot *behind;* if tied in front, the knot holds the rain, and keeps a drip upon the bud, besides pressing upon the bark, and indenting it there, stopping, to a degree, the current of the sap. The ligature should be as tight as one could bear a short space upon one's finger.

A laurel leaf may be lightly tied to the shoot at both ends of the leaf, so as to form an arch over the bud, to defend it from the sun and rain, both of which are as prejudicial as the air.

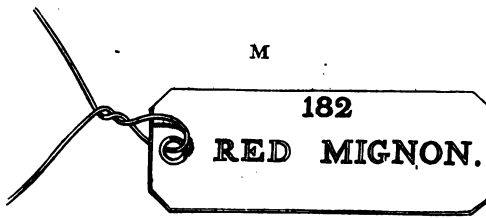
SUCCESS.

REMEMBER, that final success depends upon the *entire* exclusion of sun, air, and

wet; the shaking of the bud from its position when once fixed in it; continuation of the sap; and the fitness of the shoot and bud to each other—which latter is known by the facility with which each bark strips from its wood.

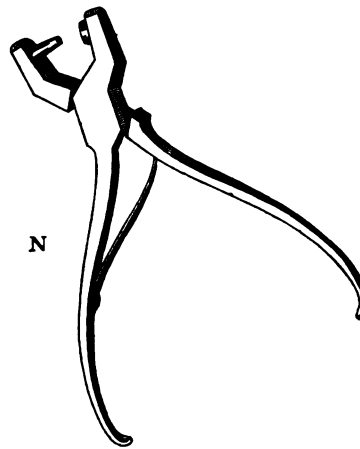
It will be well to make a few experiments upon a branch of willow before you operate, as that, from the ease the bark moves, will show you how your roses ought to be done.

LABELLING.



When your buds are placed, fasten a paper or parchment to each tree, to mark the sort; and when the whole are finished, if they are in lines, mark the first and last tree

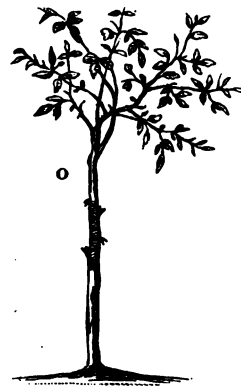
of the line as follows—if separate, each tree must be so treated:—Procure from the plumber a sheet of lead the thickness of a sixpence or a shilling: cut it into long squares, upon which stamp the name of the species, and affix the label to the plant by means of a small piece of *copper* wire, which should not be twisted tight round the stock, but half or a whole inch left for it to swell out in. The punch to cut the hole in the label should be a shoemaker's nipping-punch;



and if the lead sticks in it, a little oil should be used—the thinner the lead, the less likely to stick. The letters are procurable at any tool-shop, and should be small ones, as in the engraving.

A pair of small nippers and pincers should be used to twist the wire, which should be cut into suitable lengths beforehand.

BODY-BUDDING.



BUDDING on the body, instead of on the shoot of the tree, is best done on young and

clean stocks, with round fruit, as the bark is less hard. It frequently succeeds half way down the stock, in preference to the upper part; and is advantageous when the shoots are not large enough to bud upon, or when they cannot be used without running the chance of depriving the tree of its support, which is always the case when they are not very healthy or strong, in which case the tree should be budded low down; and it has this advantage also, that it leaves but one wound to heal instead of two, and that closes over better, from the tendency of the new shoot to rise straight up and cover the injury, whereas, in shoot-budding the wound is below the bud. It is also useful in case you have but one shoot to work upon, when you insert another in the body opposed to that in the shoot.

In nurseries, where it is desirable to have every sort of rose, and of every height, the small species of briar, which is quite green at the age it is used, is planted in long rows,

quite free, unsupported, and left almost to itself, entered in the ground with all the upper branches cut off similar to the others, and of a much greater length than desirable to use. These small briars push vigorously at the top: they are left to form what heads they please, and in July the buds desirable are entered, (with great care, for, being pithy, a cut too deep would cause them to break,) with buds of the most delicate sort, any distance desired below the head; and in March, an inch above the bud, these heads are cut off, the plant being young and growing, and the sap well fitted to the plant to spring from the bud. They generally make more appearance the first season, in proportion to their size, than large ones; and almost always cover their wounds better, but they never attain the same size.

FAILING BUDS.

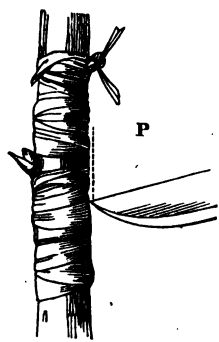
FAILING buds should always be replaced with others, (but be it remembered, that not one in ten ought to fail,) as near as possible to the place they were before entered, without mutilating the branch or body of the tree. Two buds in a tree are enough; but if three, or even more, are happily placed, they unquestionably occupy the *sève* more regularly and truly, and do not delay it in the succeeding spring, a matter which must be productive of more or less injury, and from the effects of which, in some instances, the tree never fully recovers: it is therefore desirable, that the buds to start be in proportion (as nearly as can be) to the supply of sap to support them. Nature has so arranged, that where buds are deficient, the pulp accumulated in the single bud, placed in the branch, or left there, the top being broken off, shall divide itself, and form three or four distinct

eyes, each breaking out with nearly equal force, and forming a distinct branch. Notwithstanding this provision of nature, the partial check still produces injury, and a tree thus treated is not quite equal to one having its natural leader. The longevity of budded roses, I am much inclined to think, would be increased by encouraging four or five shoots, on the wild briar, and placing, with extreme care, as the shoots would be smaller, a bud upon each, in which case the supply of sap, and means of expenditure, would, of course, be more even.

UNTYING THE LIGATURES.

THIS operation must mainly depend upon the weather; in general, during rainy weather a month may elapse. If the weather be hot, six weeks will, perhaps, be scarcely enough; and sometimes it is a matter of indifference if the ligatures be removed or not until the spring.

The object of the ligature in the first instance, is to keep out air, sun, and wet; in the second, to keep the lips of the over-laying bark from turning up with the heat, and disuniting the wound which has barely healed; but care must be taken that in securing these advantages, the bark swelling with the growth of the stem, is not confined to the injury of the bud. To avoid this, as well as to secure the benefit of binding up, when you find the buds swelling, cut with the point of the knife, taking care not to injure the bark, that part of the ligature which is just behind the bud, leaving the bass on, which will continue to protect the bud from the sun, and three weeks afterwards remove the whole of the ligature. Or, you may untie the bass,



and taking a broader piece, as not so likely to run into the dent created by the first, tie it on lightly to keep down the edges of the overlaying bark.

SHORTENING THE WILD BRANCHES.

At the end of October, or whenever the sap has quite deserted the stocks, but not before, it is desirable to shorten the wild branches for two reasons; first, because it strengthens the tree against the frosts, &c. and, secondly, because it makes your garden a little less like a thicket. Leave about eight or ten inches upon each shoot, taking care not to bend the branch too much, nor in any way disturb your buds. During a rigorous winter, some cover the ground about the stocks with straw and manure to prevent injury from frost, placing cords across and across to prevent the straw from

being blown away, and pinning the cords with a peg to the corner; this is sometimes advantageous, but not always necessary.

MARCH PRUNING.

On the first of March, or during the first week, commences the operation of depriving the shoots of the wild stocks of their useless wood, and from this date commences the return for your previous labours.

Leaving one eye beyond, that is, nearer the summit of each branch than the bud you have placed upon it, cut off the remainder of the wild branch, and if there be any of the stem of the tree above the highest wild shoot, cut that off also close to the shoot, viz. till you come to live wood, slanting, as at first directed, and immediately cover the wounds with the mixture before given; unless, indeed, you are not anxious for immediate appearance, or mean, most inexcusably, not

to be at the trouble of laying on the mixture, in either of which cases, leave the stem till the next spring.

SAP BUD.

Upon the single bud you have left at the end of the wild branch, depends a great deal of the strength of the expected shoot. The bud you have inserted, though almost sure to grow, is not incorporated with the tree itself; for, observe, if you break off a branch of a tree in its natural state, part of the tree will come off with it, not so a bud placed in the branch, it will come off as if it had been merely stuck on. The sap, therefore, does not quite so readily flow to it, and must be drawn up by a leading bud, not actually as a matter of necessity, but as a means of increasing success. The desideratum is to put the sap in motion, and establish its action by means of the leading

bud; and when the inserted buds are fit to perform their part, to transfer the supply of the leader to them, and as an early start is desirable, the assistance of the leader is most useful. The sap, in the present instance, may be considered as a vessel on the water, which requires some force to propel it, but when once set in motion, unless a severe check be experienced, its own weight will keep it so.

The destruction of the leader of a tree, disorganizes, for the time, the whole vegetable economy. If the leaders of some trees be stopped, they will form half a dozen or more, equal growing branches, each performing its quota of the part of the original leader; and if the leader of a creeper be destroyed, the accumulating sap sets to work the buds half way down the plant, and the produce being multiplied, the size of it is diminished.

It may here be remarked, that the capability of the tree is much more than sufficient

to support what is desired of it this season; if, therefore, under an impression that the tree will be weakened by wasting itself in wild produce, the sap-bud be not left, the plant will obstinately persist in showing buds at the sides of the stem, and after making a feeble shoot from the inserted bud, and this with a considerable delay, it will finish its first season with a head, not more than equal to one from a bud *a l'œil poussant* of the same year.

But it is difficult, in this case, to do more than lay down a principle to be acted upon, as the individual case may require; if a shoot have but one branch upon it, (and that perhaps not strong,) on which there is a bud placed, a single sap-bud is not sufficient to set the whole in vigorous motion, but a couple should be left; and this is more peculiarly necessary where the bark is hard, and the stock of a couple of years' growth; where this is not done, or the sap-buds be knocked off too early, the tree, as before

mentioned, would struggle to free itself by other channels, and a succession of suckers might be expected.

A tree planted with a dormant bud upon it, and little root, will frequently, if deprived of its sap buds, hang back until the sap be powerfully collected, and break out a knot below the inserted bud, which would then commence and continue to progress with the wild one, which, although the lowest of the two, should not, under these circumstances, be knocked off, (provided the other continues to increase,) until it arrive at the same state of forwardness as directed for the sap buds, when the inserted bud being ready to take up the nourishment, the wood shoot may be taken off.

It will thus be seen, that a certain number of buds, according to the strength of the tree, strengthen instead of retard the expected produce, and therefore, from three to six sap-buds upon a tree are desirable; but never below the inserted buds, unless in an

extraordinary and otherwise hopeless case, and then the closer to the inserted bud the better.

In all cases when the tree refuses to break above, the formation of suckers may be apprehended, particularly from clump roots, which renders it very desirable that the root should be properly trimmed at first planting.

Leave, then, the wild bud to push till it has got two or three pair of leaves, and then stop it by nipping off the point with your finger and thumb: your placed bud will then shoot vigorously, and when it has got four or five inches long, you may cut off the sap bud nearer its base, it is not desirable to cut it clean out, (though it must not be allowed to throw out long side shoots,) but barely leave it alive in order to keep life in the end of the branch, which the March succeding, *and not before*, you cut clean off down to the inserted bud, which will then (if the place be lightly protected with mixture) cover the wound completely.

ŒIL POUSSANT.

SOMETIMES a jet from an eye will start before the winter, and grow an inch or so, and this (if not killed by the winter, a matter to be dreaded with a small and delicate shoot) will show a tendency to spring into leaf with the first intimation of spring. This is not desirable, as it would form one straight leader; and yet, from the little rings around it appearing so undefined, and no buds being clearly perceptible, the only chance of life appears in the summit. This, however, is not the case; and in order to delay it, and cause the sap to form buds on either side, shorten the little shoot to three or four rings, thus leaving it about an inch long; buds will then form on each side of its base, as well as from the rings, and instead of a single stronger leader, your tree will form a little head at once.

GUARDS AGAINST WIND.

THE inserted buds when vegetating have, as has been before observed, no immediate junction with the stock; to prevent, therefore, their being knocked out by the wind, it is necessary to tie a small, but not flexible twig, as thick as one's finger, to the stem of the tree, leaving a foot sticking out above, and when your jets are a few inches long, tie them with a piece of bass to this guard to prevent their being blown out.

It sometimes happens on looking at the buds which have taken and sprung several inches, that you will observe a want of vigour in some particular shoot, which droops as if about to die off. On examining this you will find that just at that place where the ripening has commenced, a slug has been at work, and eaten half way through the shoot; whether it is that this operation is performed by the animal for the purpose

of destroying the end, and eating it when dead, or merely to devour that small portion to which it has applied itself, does not appear, though from the habits of the animal, the former is not improbable. However this be, slugs seldom sever the shoot the first time they attack it, but always return and finish what they have once begun. If the shoot were left to itself, the slug, or the next gust of wind, would destroy it. To avoid this, lay a small stick along side the shoot, and bind it round and round gently with bass (covering the shoot close) to the top, leaving only such leaves as are necessary out; thus rendering it impervious to the attack of the animal, for at least two or three inches. Place a dead cabbage or other leaf at the bottom of the tree, and probably you will find your enemy under it in the morning; while by the precaution you have taken, the shoot will be protected from further injury, unless a fresh attack be commenced beyond the ligature.

PRUNING FOR TRANSPLANTING.

HAVING gone through all the detail necessary to secure the budded trees, and bring them into bearing, (observing that they are not on any account to be mangled, shortened, or the passage of the sap in any way obstructed during growth,) we now come to the time when the tree, having become ornamental, is fit to repay the labour laid out upon it, and to be planted out where its beauty may be seen. This is about the commencement of November, when the branches should all be cut down to about a foot long, and if any leaves are still left, cut them off *carefully midstalk, with a pair of scissors.* Except where unavoidable, (as in the instance of the wild stock,) a tree should not be lopped root and branch at the same time; the double mutilation is injurious to it. Thus half of each branch is continued to keep up an intercourse with the

root, and when an action is established, cutting in the head is desirable.

You will observe, on removing your trees, the roots they have made, and the healthy appearance of those which were left; shorten your roots a little when you replant; if a large root cut to a lateral, if a small to a fibre; but as the roots in this case will be healthy and small, cut as little as possible. And it may here be well to observe, that all cuts to remove branches, knots, or roots, should be quite clean, slanting, (and deep enough to the stem, viz. even with it,) and nothing left sticking out, lest you create dead wood and eventually injure the plant; and all wounds should be carefully healed. In the case of dead wood, cutting should always be to that which is alive, and a living circle of bark around it.

The removal of the extraneous parts of the wild branch, and the stem left above it, (if any,) as subsequently directed, are best effected eighteen months after budding, in

March; if sooner, the bud is apt to be injured, as well as the wound left uncovered; but at this time you may cut down to the base of bud and branch, and laying on the mixture secure the wound from injury.

All summer and spring made wounds, if clean cut, will partly cicatrice over the same year, and if defended while in progress, will not do any future injury.

REPLANTING WITH A DORMANT BUD.

If you are pressed, you may replant a stock with a dormant bud upon it, but this is not desirable, although if the wild branches to be cut off are large, it may be safely enough done, because a tree in its natural state, if the root and branches are in proportion to each other, has strength enough to carry its nourishment through the old wood, and then to make new. Old wood does not remain in *statû quô*, but is enlarged

by a fresh layer each year, between the bark and wood, to enable it to bear the additional weight it has to support, as well as to enlarge the channels for the conveyance of sap to an increased head. Both these causes act upon trees which have their own entire weight to support, and therefore they are conically shaped; only the last applies to creepers and climbers, and therefore they can but barely be called so, being nearly of a size all the way up.

On this showing, therefore, if the old wood be cut away, the injury done to the root in moving is made up by the non-necessity of keeping up the old wood; and thus great part of the labour of the sap being saved, and its duty diminished, as well a free course given to it, the buds succeed.

This, I apprehend, is the theory upon which all pruning for transplantation is founded. But to explain this more fully.

Amongst trees, there are some of which the bark is so strong that the sap is confined

in its ascent, and the tree becoming hide-bound is unable to increase, unless a slit be made from the top of the tree to the bottom, in order to give the sap full liberty to ascend. Those whose barks have become hardened and dry, may sometimes be seen to throw out buds all the way up the body of the branch, each bud being weaker than the lower one, the point of the branch dying away.

This tendency of the sap to desert its former channels, may be observed in newly planted thorns, particularly whenever they have not been cut back enough.

Now, a tree first planted makes the following year but little wood, and consequently few leaves, and the intercourse between the roots and stem being thus, as it were, partially suspended, the bark becomes hard, and the next year the sap has a great difficulty in ascending. Where a check occurs in vegetation, a sufficient quantity of

sap to start the leaves, creeps up and accumulates by gradual steps; but when the warm weather comes on, and the shoots are expected to flourish, they are found to have no support from the root, and they go off as a matter of course. Shoots called Gourmands, on the contrary, and suckers being soft and free, get to an astonishing size: witness the shoot of a vine, which is frequently larger in the girt than the stem it proceeds from.

A tree lately moved and planted with more branches than its roots can nourish, may be considered like a man in debt, the little it can do is absorbed by the demands upon it, and it is just able to keep up what it has. The next year sees it in the same state of weakness, with a hard bark, and the whole substance confined; it has a more difficult duty and unincreased means. Or if it has not sap sufficient to keep up its present head, its parts die off as the

supply diminishes, and the tree grows weaker and weaker; and having exhausted all its supply, without an efficient return from the leaves which are unhealthy, it dies off and perishes by degrees.

On the contrary, a tree newly planted may be likened to a person who is promised that no demand shall be made upon him until he is enabled to answer it, when it is left with no open buds upon it, and only enough closed ones to carry on the duty required when they are forced open, which will be sooner or later according to the individual strength of the tree.

The sap accumulates, the buds start at their proper time, and when started, the tree, weakened by its removal, has no length of half dried wood to force the sap through, but the new buds throw out soft and large bases, the sap courses through them, establishes a give and take intercourse with the root at once; they require no more of

this must be done, it may be well to observe, that the growth of a tree is thus :—the rings round the bottom of both stem and branches are the depositaries of a dormant bud, which will not be called into action unless the buds above be injured, or unless the sap arise so profusely as to be unable to expend itself by the upper parts, in which case the buds below break out; though, indeed, they will occasionally do so, as the natural act of the tree in preference to rising higher. This is more observable in the wild rose than almost any other plant, and perhaps may, in some degree, explain the reason why budded roses are shorter lived than those on their own bottom; for any one who has at all observed the growth of wild stocks, must have noticed that the original head is seen generally on hedges in much worse plight than the shoots which have been subsequently formed at its base. This tendency of the dog-rose to break out below, must be

checked in two ways; the first, by destroying every sucker and shoot as it starts, and the second, by finding full work for the sap above, and by giving it a free passage.

If, then, in cutting the top of a tree at pruning time, you leave a couple of buds on every shoot of last year's growth, or three *at most* upon a very strong one, there will be quite enough to occupy the sap, keep the tree within bounds, make it much handsomer, save the sap the expence of maintaining old wood, and give it a free course. If there be more sap than enough, a fresh shoot will likely enough start from the crown of the graft, or the rings upon the first year's shoot, and increase the head of the tree, as well as bring you back with new wood nearer home —a matter always desirable as tending to keep the head from straggling.

Cutting to the lowest buds always leaves the sap with but a short channel to pass

through, strengthens the branch below the buds, and is every way beneficial, if care be taken that a sufficiency be left to occupy the sap.

If the tree be not pruned at all, it will lose its shape entirely in a single year, afford little or no bloom the next, and eventually straggle to death.

Trimming the shoots has nothing essentially different in the manner of execution to trimming the stock; in trimming to a bud, barely the thickness of a sixpence should be left above the bud, and the excision should form a slant about equal to that caused by dividing a square from angle to angle: if more were left above the bud, it would die down to the bud, and prevent the bark from healing over the wound; in general, the line of the bud is the slant the knife should make in its passage through the shoot.

Cutting out old wood should always take

place where it can; the desirable point being to keep near home, as it is called; when, therefore, your tree throws out a fresh and vigorous shoot, close to the base of an old branch which has straggled too far from the graft, cut out the old wood in March, close to its base, leaving the young shoot to supply its place, and receive its nourishment. This principle well applied, will always keep the trees in bounds; but as this requires judgment, and cannot well be explained in writing, take a lesson upon the subject, the first convenient opportunity, from a scientific gardener.

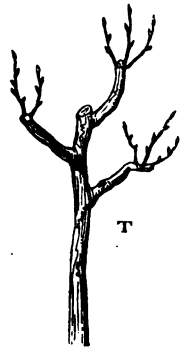
SHAPE OF TREES.

A TREE well formed, with a promising head, and in health, ought, the spring succeeding the budding, to have a clean straight stem,

no lumps or knots, one shoot quite at the summit, and two, or at all events, one other shoot as near as possible also to the top; if there are two shoots only, at opposite sides to each other; if three, forming a triangle, if more, as nearly equidistant from each other, in the diameter of the stock as possible, (and here be it observed, that the more shoots, at the top of the tree, the handsomer and quicker is the head formed,) each with a bud inserted in it, close to the stem: and at the cross cut, where the bark of the bud usurps the place of the original bark of the stock, a sufficiency of sap ought to have exuded, not only to have joined the bark of the bud with the unmoved part of the bark above it, but also to have joined the separated part of the bark of the stock to the same place, and thus linked the two barks of bud and stock

to the single bark of the stock above them.

The edges of the vertical slit in the bark do not heal by attaching themselves to each other, but the bark of the bud underneath them forms a connecting link, and the edges above mentioned perish insensibly away, leaving little or no scar behind. The second spring, the tree becomes more perfect, the extraneous parts of the stock, if any remain, are cut off, as well as those of the shoots, and the head so arranged as to throw its buds where they are wanted to make it round, even, and handsome. If, however, some shoot be obstinately bent on growing in any direction, spoiling the appearance, and crossing the others, by no means remove it on that account alone, but



T. In order to keep them distinct and clear, the annexed plate shows the shoots at a much greater distance from the stem than they will in reality be, the buds they spring from having as beforementioned been placed as near to it as possible.

place a little twig across from it to any other convenient branch, and confine it for the season as you wish it to be, removing the ligature in the succeeding spring, or even in the same autumn when the sap is down.

Lastly, the third spring the tree should show itself with all its wounds nearly closed, its buds strong, full, and healthy, and it should look perfectly natural, those parts of the shoots upon which the buds were placed more incorporated with the stock. The bark clean, no dead wood; and wherever a shoot has been shortened, the place so grown over as to leave no dis-sight, which will be the case for some time wherever any wood more than one season old is cut away, and a thin shoot of a single year springs at the end of it. This is the reason why forest-trees look so ill when shortened as old ones, viz. that the taper appearance is destroyed, and wood of five or six years' growth is continued by the shoot of a single spring, and thus a piece of wood, of the diameter of half a dozen

inches, has a little mean-looking shoot, or in all probability half a dozen, not thicker than horsewhips, at the end of it.

Whatever it is worth while to do, it is worth while to do well; work properly commenced does not require that constant superintendance which a bad beginning is certain to render necessary, and which eventually involves a much greater expenditure of time than any labour bestowed at the outset could have demanded.

PLANTING OUT.

Having thus brought our subject to a close, as to the operative part, in preparing and perfecting the tree, it may not be amiss to spend a few moments in the consideration of the effect expected to be produced by it when planted out.

There are three causes of beauty in a tree,

Be it observed, that a three foot standard is most in keeping with the head it carries, and being nearer the ground, has a very natural and steady effect, and in confined places, is unquestionably best in its appearance; but if the tree is to be distant from the eye, or the shrubbery, or walk be large and increasing in distance, a four foot standard is certainly more distinguishable, and has a much greater effect.

A foot standard is of little or no use, except it be intended to approach the edge of a border, or is grafted for the convenience of affording nosegays, or increasing the quantity of the plant placed upon it.

The heights most in use having been shown, it may be remarked, that for a weeping rose to stand singly, (perhaps surrounded with a wire guard and creepers upon it to have a more marked effect,) you cannot find a stem too high, if it be proportionally strong. A fine plant of this sort, six, seven, or even eight feet high, budded with a noisette,

or boursalt, looks beautiful, and its long free branches, covered with clusters of roses, have a wild and luxuriant appearance, which give a distinct character to a tree budded in this way.

Thus having arranged where the plants are to be, and having made the earth *good* all around, stake up each tree with a neat, clean hazel stake, (unless the stock be so strong as not to require it,) saw off the top *level with the top of the wild stem exactly*, a matter that conveys a great air of neatness, and with a piece of bass, or better a small strip of pitched rope attach your tree to the stake.

OBSERVATIONS.

THE following may be considered a more entertaining and less slovenly mode of propagating the rose, as well as having the advantage of economy, as you make use of the cuttings of the pruned trees, which would otherwise be lost. It must be remembered, however, that it should only be practised upon free well-rooted stocks, as otherwise the delay in the rising of the sap, and the uncertainty of the supply, frequently defeat the purpose. Grafting, therefore, should succeed budding on the same stock, not precede it: as a bud failing on the stock, if the branch be not destroyed while the sap is up, leaves the stock still vigorous in the ground; if therefore you wish to try this mode, it should be upon stocks that have had a spring to root themselves.

The points to be desired, are, that the barks of scion and stock should be cut quite

smooth, and not separated from the wood they grow upon—that neither should be bruised—when they are put together should fit close—a supply of sap should commence as soon as possible—that all sun, wind, and rain should be kept from the wound till healed, and that no ligament should be removed, nor shake given to the parts newly placed in contact, till they are perfectly healed; any jar to the scion when placed is likely to defeat the purpose.

GRAFTING.

If your buds have failed, or if you have a good choice of shoots in March, from your trees, which you desire should not be wasted, examine your shoots after pruning each tree, select those which are the finest, and place their thickest ends (taking care that the produce of each tree be tied in a separate bundle and ticketed) in a lump of moist clay an inch deep; pinch the

clay tight round them, and then put the lump of clay in a pot full of earth (leaving the shoots out) until ready for use. It must be remembered, that at the end of each shoot there will probably be one or more buds open; these must be carefully cut off from the shoot or they will infallibly exhaust the others.

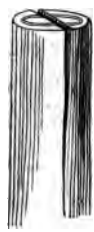
Opening buds to be cut off and thrown away previous to the insertion of the scions in the clay.

Piece of scion placed in the clay to be cut off at the time of grafting.

Let the shoots remain for three weeks in an outhouse, or any place neither very dry nor very damp, where neither wind nor sun can come in contact with them.

During the first week in March, cut off

your stock, (in which the sap should be beginning to rise,) horizontally; make a slit in it, straight downwards, of a couple of inches, or an inch and a half long, taking care not to injure the sides of the bark.



Take the shoot in the left hand, and leaving three buds upon it, or two if the stock be not large; cut the lower extremity of the shoot in the shape of a wedge, the back being rather the thinnest, and the lowest bud about half an inch above the thick end of the wedge. In doing which, care must be taken that the bark be undisturbed, and each scion so cut that all the buds point outwards, or at any rate, be so placed that the shoots from them may not interfere with each other.

With the end of your budding-knife,

or a little wooden or ivory wedge, open the slit in the stock on one side, and then place

the scion, with the thickest part or front outwards, in the other, taking care *that the edge* of the inner bark or liber of the scion touches the edges of the inner bark of the stock, all *the way down;* pull out the wedge and enter another scion in its place, the slit being kept open by the first; if the size of the scion be half the size of the stock, you may leave a shoulder to the scion, and thus increase the chances of success.

Any number of scions may be inserted in the same stock, but from one to four are all that are desirable in the present case, to cover well over the head of the stock which is apt to receive much injury from the weather, if not carefully attended to.

The object of laying by the scions, is that the stock may be the forwardest, and

be enabled to supply the sap, and force them forward at once, instead of lingering while they perish from exposure and want of nourishment. Whether this danger might be entirely removed by the following new mode of grafting I have not yet had an opportunity of trying.

Leave a small end to the scion, with bark, &c. upon it, and having finished your graft as above, turning the overplus outwards, and below the clay, insert it in a small phial, kept constantly filled with water, in order to keep the scion fresh until the junction takes place. When well established, remove the phial and cut off the overplus close to the stock, covering it with cement.

When the shoots are on, tie up the whole with a bass ligament, to prevent the scions from ever shifting, and then cover the whole beneath the lowest bud, with grafting clay, taking care to exclude air, sun, and rain. If the clay crack, it must be renewed, not by shifting, but by filling up the crack.

V

In about six months, the clay may be removed, and the wound *covered with mixture*, this latter must on no account be omitted.

The choice of scions is regulated by the same rules as the choice of buds, only that in choosing scions some reference must also be had to the wood, which should have a sufficient thickness to keep it from getting dry easily, and to facilitate the operation of sloping the edges. The best buds are generally nearer the base of the shoot than the summit, but two or three scions may sometimes be got from a single shoot. No scion should be used when the buds upon it appear to have shrunk and lost their fulness, from having been laid by, and care should be taken on passing the bass ligament round the stock for the purpose of fixing the scions, that a piece of the bass be brought between

the scions in such a manner as to protect the cleft in the centre of the stock from the clay, and to leave the vacuum to be filled up with sap.

Should any graft fail, which will be seen in a longer or shorter space of time, according to the weather, (viz. in moist, dull, growing weather it will soon show, in that which is dry, windy, or cold there will be delay,) you have still the resource of knocking off the clay and reserving for use the fresh buds which start from the stock, in which case, cut the stock off immediately above them, and bud in the following autumn as usual.

Grafting the rose, however, leaves a worse wound to heal over than budding, unless the scion be nearly the same size as the stock, or two or three scions of free-growing sorts be entered in the same graft; there is also this disadvantage, that the portion of the scion which is entered in the stock is smooth, and consequently does not from time to time

furnish new wood, whereas in budded stocks shoots occasionally spring from the inserted eye, (and that sometimes years after it has taken,) thus renewing the tree by preventing it from straggling, as well as giving it a more perfect and handsome appearance.

The advantages of grafting, are that it clears your garden of wild growing stocks, promises fair for instant success, especially when the scions are from hardy sorts, such as the Du roi, Maiden's blush, &c. and your work is complete and tree formed, and, in some cases, flowers in a single season.

In the event of your having neglected to procure stocks, the operation of grafting may be performed equally well with budding upon plants in a neighbouring hedge, and those which succeed can be transferred to the garden at leisure.

OPERATIONS IN DIFFERENT MONTHS.

January.—Procure wild stocks if delayed before.

February.—Wild stocks may still be planted with advantage, but the season is getting forward; cut, and put by some scions for grafting; beat up clay for that purpose, and attend to the buds in the wild stocks.

March.—This is the last month to plant wild stocks, but better late than never; trim your tree roses; restake those that have got blown about; graft and pinch off the wild buds where not wanted, and from those which have been budded eighteen months, cut off the remaining parts of the old stem and that part of the budded shoot which is beyond the bud inserted, the first to the base of the shoot, the second, close to the

bud, they are then expected nearly to heal over the same year, cover them with cement for that purpose.

April.—Attend to your cleft grafts by keeping down the buds below them; eradicating suckers, and cutting off the heads of failing grafts to bud upon in autumn; attend to the shoots budded upon last year; nip off the point of the sap-bud where required, and put on your guards; kill snails and caterpillars this month, and whensoever afterwards you find them; leave some flower-pots inverted to catch slugs in, which will infallibly harbour them.

May.—Attend to the buds and suckers of wild stocks, and tie the new shoots to the guards, where necessary, without delay.

June, as in May.

July.—Prepare your budding tackle, by stamping labels, and leave nothing to be looked for when the time comes; if the season be early bud at the end of the month.

August.—Bud all this month, and if any

buds start, they may be treated as œil poussant; attend to ligatures.

September.—Continue to watch your newly planted buds, and for the first fortnight replace any that fail; loosen the ligatures if necessary, not without, except to examine where you have reason to think they require it.

October.—The last week you may transplant; cutting off the ends of the wild branches as directed.

November.—Take up any trees (carefully examining their roots) you may wish to have removed, and replant them immediately; procure fresh wild stocks to plant, and set them out in line, or if delayed, lay them by the heels.

December.—The same as last month.

SHORT CATALOGUE OF WELL-KNOWN ROSES.

THE different sorts of roses are so numerous that a catalogue would be next to impossible. A few are here mentioned as amongst the most desirable.

Fixed season for blowing.	Perpetuals.
Damask,	Crimson du Roi,
Tuscany,	Blush do.
Burning Coal,	Banksia,
Red Mignon,	Multiflora,
Par coloured do.	Whe Noisette,
Moss,	Purple do.
Scarlet Moss,	Double Purple,
Single do.	Greville, &c.
Provence, &c.	

Damask.—A free blower, even near towns, or at least where any other rose blooms at

all; wood healthy and thriving, &c. flower handsome.

Tuscany and Burning Coal.—Colour dark; foliage handsome.

Red and P. col. Mignon.—Healthy growers and handsome flowers; foliage good.

Moss, Scarlet, and Single do.—The two last of these are the handsomest, the scarlet in colour, and the single in singularity of shape, the wood and foliage not so handsome.

Du Roi, crimson and blush.—Are elegant roses; the colour of the crimson being the handsomest; the tree continues to flower all the season; the buds take freely on the wild rose, and the wood and foliage are both healthy and good; indeed, amongst standards in a nursery, this plant may at once be discerned by its healthy condition and appearance; it heals over better than almost any, except the very free-growing sorts; it has the healthy growth of the

China rose, with the appearance of the more legitimate sorts.

Banksia.—This rose is a very rapid grower when well rooted, and covers a wall well; throwing out its side shoots as regularly as a vine, and as near together; the flower is free, and tree hardy and healthy.

Mutiflora.—This is a good training sort, takes freely, but is impatient of cold; it looks beautiful when in flower, and grows rapidly.

Whe and Pur. Noisette.—These are lovely sorts; they take easily, flower freely, and in rich clusters; support the cold moderately, are fast growers, cover their wounds well, and continue to blow all the season.

Double Purple.—This is a lovely rose; grows rapidly, stands cold, carries its flowers in bunches, makes a good trailer, and is in every way desirable.

Greville.—A remarkably fast grower, flowers in clusters, covers the wounds in the stock instantly; but as it continues to grow, till

checked by frost, it has no time to ripen its wood, and is often cut off; it breaks out, however, from the crown of the graft, &c. when to all appearance dead.

The shoots are so long in a single season, that it serves better as a trailer; when it flowers, it does so profusely; it grows, however, so fast as sometimes to show little or no bloom on its own bottom; the species is not every where known.

Sanguinea.—Pretty colour, exquisite foliage, free grower, takes easily.

Added to these are the Boursalt, Boursalt Florida, Wellington, Duchess de Berri, &c. &c. ad infinitum.

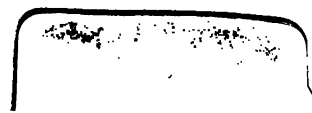
The advantages of free-growers, are, that at almost every season you can find a bud fit to use, and they continue to bloom and look handsome till the end of autumn, and the number of shoots from a single bud are unlimited; thus forming a head, the first

season, and restoring the activity of the whole tree, in a short space of time.

They are not, however, quite so easy to keep in order as the other sorts, nor quite so regular in their wood, (except the du Rois, the growth of which more assimilates that of European roses in general,) and they are more apt, on first coming into leaf, to attract the aphides, that little, terrible insect, the scourge of the rose, and for which no adequate means of destruction is known; though destroying, by the hand, at the commencement of the season, is the most effectual means of keeping down. As it is not only inconvenient and tedious to make use of the fingers for the purpose, as well as difficult to remove the insects without crushing them upon the shoot, which invariably either retards or stops its growth, the readiest method is to brush them off with a common painter's brush, made of bristles, the hair of which, (viz. that part

which is below the binding) is about an inch and a half long and the same in circumference.

Lay the shoot along the palm of the left hand, and pass the brush from the bottom of the infected part upwards, and with a very little practice you will be able to clear a plant of its tormentors, without injury either to the bloom, or to the tenderest shoots to which your brush is applied, in a space of time which at first appeared impracticable.

THE END.

LONDON:
IBOTSON AND PALMER, PRINTERS, SAVOY STREET.